## NEW WATER TREATMENT PLANT IMPROVES FRENCH CREEK AND BLUE RIVER

Plant expected to remove more than 95% of dissolved metals from Wellington Oro mine drainage

Breckenridge, CO -- After nearly a decade of effort and anticipation, the Wellington Oro water treatment plant turned on the pumps on Tuesday, November 18. Officials from the Town of Breckenridge, Summit County Government, the U.S. Environmental Protection Agency (EPA), the Colorado Department of Public Health and Environment (CDPHE), and BioteQ Environmental Technologies dedicated the new water treatment plant to treat water discharging from the abandoned Wellington Oro silver-zinc mine site near Breckenridge, Colorado. An open house, allowing the public to tour the new facilities, followed the dedication ceremony.

The water treatment plant is expected to remove cadmium and zinc from drainage entering French Creek at the mine site, resulting in improved water quality in the creek and an improved brown trout fishery in the Blue River. The design and construction of the plant was overseen by the EPA and CDPHE.

"This is a decisive step in the effort to restore clean water to French Creek and the Blue River," said Bill Murray, Director of EPA's Superfund Remedial Program in Denver. "This collaborative effort offers a precedent for overcoming obstacles to mine site cleanups, and today we celebrate an achievement that will improve habitat for fish and aquatic life for miles downstream."

The Wellington Oro site, once the largest mine in Summit County, is an abandoned silver and zinc mine located three miles east of downtown Breckenridge in French Gulch. Although the mine ceased operating in 1972, water draining from more than 12 miles of tunnels, adits, and associated mine workings is contaminated with high levels of zinc and cadmium.

In 1989, EPA identified the Wellington Oro mine as a potential Superfund site. Since that time, EPA, CDPHE, the Town of Breckenridge, Summit County, and others have developed a plan to address the area's water quality problems while protecting alpine habitat and open space. This collaboration resulted in an alternative approach to Superfund, a first-of-its-kind settlement that has leveraged cleanup actions to improve water quality and has allowed the Town of Breckenridge and Summit County to purchase and convert 1,800 acres of private mining claims known as the Golden Horseshoe into public open space.

The discharge from the Wellington Oro mine has been identified as the largest source of metals pollution in the Upper Blue River watershed. The treatment plant will remove more than 90% of cadmium and more than 99% of zinc from the mine drainage resulting in significantly lower concentrations of dissolved metals in the Blue River downstream of French Creek. Average cadmium and zinc concentrations at the untreated mine discharge are 59  $\mu$ g/l (micrograms per liter) and 123,000  $\mu$ g/l, respectively – concentrations that are much higher than brown trout can tolerate. The water discharged from the treatment plant will have a cadmium concentration of less than 4  $\mu$ g/l and a zinc concentration of less than 225  $\mu$ g/l.

Vancouver, B.C.-based BioteQ designed and engineered the new treatment plant. The BioteQ process for water treatment and metal recovery, which uses sulfide precipitation, was selected as the best technology to remove dissolved cadmium and zinc from mine drainage at the Wellington Oro site. This method was selected because of its ability to remove metals from the water and produce treated water that meets strict water quality criteria. The process also allows for the dissolved metals to be removed from the water in a form that can be sent to a refinery and recycled.

"BioteQ is pleased to provide a sustainable water treatment solution that removes dissolved metal from acid mine drainage produced at the Wellington Oro mine," said Brad Marchant, CEO, BioteQ Environmental Technologies. "BioteQ's innovative technology will process approximately 300 million litres of water annually that meets Colorado Water Quality Standards for discharge to the environment, without generating waste that requires special disposal."

The Town of Breckenridge Water Division will operate the plant, which is designed to treat a maximum of 150 gallons per minute and will operate 24 hours per day, seven days a week.

The Wellington Oro Mine water treatment plant was funded by Summit County Open Space and Trails and the Town of Breckenridge. The plant was designed by BioteQ, with all the detailed civil, mechanical, and electrical engineering provided by Stantec Inc. Construction was managed by the Town of Breckenridge, with general contracting provided by Base Building Solutions, a local construction company. Mechanical work was carried out by Denver-based Bosco Mechanical, and electrical work was done by locally-based Design Electrical Contractors. The underground site piping and mine water collection system work was done by excavation company, BJE, Inc.

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